

BARUCH (S.)



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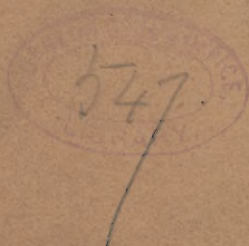
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THE CLINICAL ASPECT OF DYSPEPSIA.

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As a disease, dyspepsia has fortunately disappeared from our textbooks, and perhaps, less fortunately, it is rarely chosen as a subject for society discussion. As a pathological entity dyspepsia no longer exists, but as a curse to mankind in every station of life its existence is a sad reality, as every practical physician has ample opportunity to observe.

My choice of so homely a subject for a paper before the Association may evoke some criticism. I do not hesitate to encounter the latter, because while discussion of dyspepsia may not be vested with the glamor and prestige of the grand surgical achievements, with which visiting colleagues from distant cities are wont to regale you (and whose value are by no means to be underestimated) the suffering, mental and physical, the loss of time and money involved in it and the enormous number of people afflicted by it, lend a dignity to the subject which no surgical achievement of this great surgical era may exceed. I come to you, gentlemen, as practical physicians with a practical every day subject. Like many of you I practiced for fifteen years in the rural districts of South Carolina, this dear old State, with which are connected the happiest associations of my life. When my field of observation was changed to the hospitals and private clientèle of a great metropolis, I discovered that here too this trouble found numerous victims, and that dyspepsia like "the poor is always with us." If in country and village practice the farm laborer, the planter, the merchant and the female members of their households are victims of dyspepsia, the city furnishes the latter among its day laborers, mechanics, factory workers, as well as among the great merchants, lawyers, doctors, preachers, among its shop girls, as well as among its fashionable women. In the humblest as in the most palatial homes this arch fiend makes human beings



miserable, and sends them sooner or later to the physician. Can we dismiss these sufferers by telling them that dyspepsia is not a disease? These people come to us for treatment. How can we relieve them, *tuto, cito, et jucunde*? This is the pressing question for us.

It is a happy circumstance for both physician and patient that dyspepsia has ceased to be recognized as a disease against which our materia medica must spend the force of most of its agents. The realization that dyspepsia (difficulty to digest) is a symptom or manifestation of various diseased conditions of the stomach and not infrequently of no stomach disease at all, is the most important step toward its more successful management.

The symptoms which may be grouped under this term are general and local. The general symptoms, *i. e.*, those affecting the entire system are, as you well know, innumerable; there is not a disease whose "livery may not be worn" by dyspepsia. They range from the most serious psychoses, one of which the ancients have not inaptly termed hypochondriasis, to all those minor disturbances which are but too often erroneously grouped by superficial observers under the appellation of neurasthenia.

Moodiness leading to introspection, sluggish mental action, loss of memory, enfeebled muscular power, giving rise to exhaustion after the ordinary duties of the day, which in health were performed without effort, vertigo, insomnia, cardiac, pulmonary, and similar aches and pains, which render the patient miserable by referring them to brain, heart, lung, and kidney diseases, headaches of various types, dyspnoea, from the mildest form to the most labored respiration, intermittent pulse, tachycardia, these are some of the manifestations that may be traced to difficult digestion. These general manifestations are the chief source of discomfort and unhappiness. Which of us has not been consulted by some anxious dyspeptic who brings a tale of woe, centering around a pain in the heart, with palpitations, etc., which literally "vanishes into thin air" when an alkaline carminative is administered! How many weary dyspeptics bring in a bottle of urine, containing a thick sediment of phosphates or urates, which they interpret into kidney disease. Such cases of so-called liver disease formerly came to me almost daily when I practiced in Camden, and they doubtless come to you in great numbers. Such cases crowd the consulting rooms of the metropolitan doctor, taxing his utmost resources of tact and therapeutic

skill. When they are carefully questioned and each organ is successively interrogated, the stomach often stands out as the sole culprit. A cloud is lifted from physician and patient alike, by a thorough analysis of all the symptoms. As in all other diseases, a painstaking examination is the most important element in the management of dyspepsia. I shall presently show that time spent for this purpose is well spent in the interest of both patient and physician. Without asking leading questions we may often obtain a history of abnormal sensations and taste in the mouth and fauces; loss of appetite, nausea and vomiting, a sense of fulness, oppression, distension, distress or pain in the region of the stomach, which is absent before breakfast, but more persistent throughout the day. We may learn of eructations of gas, acid or water, following more or less rapidly after each meal. There may be pyrosis, nausea, or vomiting, etc.

The interpretation of these symptoms of difficult digestion has passed through many phases. As it furnishes us often a clue to their management it may not be without interest to summarize briefly their conception at the present time.

1. *Loss of appetite.* This may be due to a sense of satiety arising from overdistension of the stomach by gases or particles of undigested food which are retained by reason of enfebled motor power of the stomach. In the form of repugnance to food it may be traced to that often groundless apprehension of impending gastric disturbances ascribed to almost every kind of food, which is a common observation among nervous dyspeptics. It may be well to bear in mind that in organic disturbances of the stomach the appetite is usually fair, sometimes good.

2. *Sense of fulness and pressure in the Epigastrium*, which the patient usually designates as a weight in his stomach. This symptom is readily accounted for by dilatation of the stomach and by its retention of fermenting and fermented particles of food, and gases arising from them. That gases form in the stomach in certain types of difficult digestion is evidenced not only by the eructations but actual demonstration of their presence has been made by reliable chemists. Formerly the idea obtained that decomposition of food and consequent fermentation giving rise to gases only occurred in the absence of a sufficient quantity of hydrochloric acid. This error has been disposed of by Hoppe-Seiler, who demonstrated that hydrogen arising from buty-

ric acid fermentation may be developed in the presence of two per cent. of hydrochloric acid in the stomach, but when free hydrochloric acid is entirely absent, a large quantity of Co^2 was found. The intensity and extent of the fermentations depends upon the quality of the food and upon defective motor power of the stomach which delays the passage of digested and undigested food particles into the upper-bowel and thus renders the usual quantity of HCL in the stomach insufficient to prevent alcoholic, lactic, and butyric acid fermentation. Even decomposition, evidenced by evolutions of sulphuretted hydrogen may occur, and may be clearly recognized in the evacuations. Thus may the stomach be distended and, pressing upon the diaphragm, produce a sense of oppression, which renders the patient miserable and despondent, and casts a gloom over his whole life. It should be borne in mind, however, that in certain nervous dyspepsias, these symptoms are present without manifest organic changes, and in a perfectly empty state of the stomach the eructations sometimes even consisting of swallowed air.

3. *Absolute gastric distress or pain* may arise from various causes. In gastric catarrh fermentation of its contents may cause so much distension of the stomach that pain is experienced, which does not yield to anodynes. Pain is not, however, so frequent in this condition as in gastric ulcer, or in nervous dyspepsia. The term "gastralgia" usually applied to these pains is misleading, because its treatment is apt to be symptomatic, viz. by anodynes. A correct differential diagnosis of acute gastric pains may be obtained only by a correct understanding of its causation. In gastric ulcer the pain is chiefly due to irritation by the secreted hydrochloric acid of the delicate nerve endings, which the ulcerative process has exposed. Hence we have a distinctly localized pain of a burning, agonizing character, radiating to and often felt in the region of the dorsal spine, it is increased by pressure, if the latter happens to be made near the locality of the ulcer; it is aggravated by any kind of food, but more especially by imperfectly chewed solid food. Fortunately *we have an almost certain diagnostic sign* in the efficacy of alkalies for the subdual of this kind of pain. Even when large doses of morphine have failed I have seen pain from ulcer of the stomach disappear as if by magic after a dose of magnesia. I have in mind a haggard, sallow-faced lady from San Francisco, who had come to New York to consult a noted specialist with regard to a severe gastric pain,

which recurred at intervals and was sometimes accompanied by jaundice. This gentleman had examined her carefully and concluded that there was no disturbance which required treatment at his hands. In pursuance of this opinion she had decided to return home on the following morning. This plan was, however, frustrated by the sudden illness of her child which I was called to attend. Suffering severely one evening she gave me a history of her case and asked my advice. I declined a positive opinion until morning and stated that if her pains should be relieved by the powder which I prescribed for her (bismuth subnit and magnes, ust. ten grs., every three hours) I should decide upon the diagnosis of ulcer of the stomach and advise her to remain six weeks for treatment. If upon the other hand the gastric pains remained unrelieved in twelve hours I should agree with her previous medical adviser and consent to her returning home. On the following day she was entirely free from pain, and by reason of the positive opinion expressed she consented to remain under my care. The treatment adopted successfully in this case will be referred to later. I desire here only to emphasize the diagnostic value of alkalies. In gastric pains due to *nervous dyspepsia* alkalies would afford some relief, but not entire removal. The pain in these cases is not so distinctly localized, but more diffused; it is not acute and boring, but rather spasmodic, somewhat relieved by eructation and uninfluenced by food. It is at times so severe that a condition of collapse may ensue, evidenced by cold extremities, pallor and feeble pulse. Such cases may be differentially diagnosed sometimes by the co-existence of a systemic neurosis and by hyperæsthesia of the abdominal parietes, which not infrequently yield to deep pressure. Such attacks often resemble angina pectoris. I have seen them in two instances mistaken for the latter by two prominent diagnosticians in this city. They are rare, but alarming. Only a week ago, a lady of forty called at my office complaining of this type of cardialgia. She could not walk without its occurrence, but was at times affected also when at rest. Owing to the patient's age, and there being no pain in the left arm and the seat of suffering being in the epigastric region, angina was excluded. Nervous dyspepsia was diagnosed. The patient attended a fashionable wedding three days later. I conversed with her on that occasion, and warned her to remain in bed several days. Two days later I was called, and found her in bed. She had not

been relieved by an alkaline milk diet and by bismuth and magnesia. Bicarbonate soda caused eructation, and afforded some relief. On the following night I was hurriedly summoned, and obtained from her a history of several fainting spells during the afternoon, preceded by epigastric pains. While feeling the pulse and conversing with her, she remarked that a pain was approaching, and swooned away; the pupils dilated, features fixed, face cyanosed; there was a slight clonic convulsion of the arm and hands; the first sound of the heart entirely disappeared; it was an alarming eclamptic attack. Sprinkling cold water upon the face and chest was followed by a deep stertorous inspiration, which preceded complete recovery of consciousness. Upon being questioned if her head felt confused, she remarked, "My head is level now, but I was not conscious "after the pain commenced." While thus speaking, and with my fingers upon the pulse, she warned me of the approach of another pain. Another more violent spasm ensued, during which she expired. An autopsy made by Dr. Stewart, with the assistance of Dr. H. J. Wolf, revealed a slight congestion of the gastric mucus lining; no food was found in the stomach, although a glass of milk had been taken three hours before the last attack. Every organ was normal, with the exception of the gall bladder, which contained several small faceted gallstones, but the duct was patulous. The heart was small but well nourished, the coronary arteries healthy. The brain was unfortunately not examined, because the family objected to the mutilation. The diagnosis of the cause of the gastric pain was thus confirmed, but the cause of death remains obscure.

At this point a form of gastric pain may be referred to, whose early recognition is of great diagnostic importance, viz, the gastric crisis of Charcot. Its peculiarity is a periodical character, its great intensity, spasmodic type and tendency to radiate downwards and backward. The vomiting which almost invariably accompanies without relieving it, renders it characteristic of locomotor ataxia. At any rate it is always safe to examine the tendon and pupillary reflexes of patients suffering from periodical severe gastric pains and vomiting. Much bootless medication and groping in the dark which discredits the physician, would be spared by such a course. *Pyrosis*, or heart burn, is one of the prominent symptoms of difficult digestion. This is no longer regarded as due to regurgitation of acid fluids from the stomach to the œsophagus, for it has often been

found to exist when the stomach tube failed to discover any fluid at all. It is now regarded as a neurosis affecting the motor apparatus of the stomach. *Nausea and vomiting* are not infrequent manifestations of difficult digestion. In long persistent gastric catarrh, when large quantities of tenaceous mucus line the mucus membrane, nausea is not rare; it is often the result of overdistension of the stomach by fermenting materials, being more of a gulping up of the latter than a real expulsive act. Frequent vomiting of food is a serious symptom (except in hysteria) always indicating organic changes in the stomach, the most grave of which is cancer. In the latter a long period usually elapses between ingestion and vomiting of food. Its expulsion unchanged or decomposed affords a clue, which may be verified by other symptoms, as cachexia, malnutrition, the presence of a tumor, &c.

Having now briefly passed in review the local manifestations of difficult digestion and the manner in which they may aid in our diagnostic search, which is after all the great prerequisite to successful treatment, I desire to refer to a rapid and practical method of securing confirmation or rejection of the diagnosis obtained from the subjective signs of dyspepsia.

The number of chemical tests which have been proposed for the purpose of obtaining a reliable measure of the digestive capacity of the stomach is bewildering to the general practitioner. One by one I have abandoned them, except in the most rare and obscure cases. I now rely upon a simple method which I would commend to your attention and by which we may ascertain without much delay and with sufficient accuracy for all practical purposes not only the type of dyspepsia we have to deal with, but to a certain extent also the dietetic and other treatment most appropriate for the case. I refer to the *stomach tube*, which is doubtless familiar to most of you. Ordinary cases of dyspepsia do not require its application; they usually yield to a properly directed treatment without much difficulty. In all cases of chronic, obstinate and long persisting dyspepsia, however, I would advise the patient to eat a good meal of mixed food, especially enjoining upon him to consume those articles which he has long avoided as indigestible. He is requested to appear at my office five hours later for examination of the stomach contents. A strong elastic tube of one-eighth to one-half inch diameter which is sold for that purpose, is introduced

into the stomach, six ounces of warm water are poured into it from time to time and siphoned out into a basin. In gastric catarrh the latter will contain large quantities of thick gelatinous mucus floating upon the surface of the water, debris of food, sometimes unchanged and partly digested which sinks to the bottom, and much foam from gasses of fermentation. If after five hours much food remains in the stomach, a second and a third examination are made, prolonging the interval between eating and examination an hour each time, until eight hours have been reached. It has been definitely ascertained by Kretsch, who examined patients suffering from gastric fistulæ, with the stomach tube, that a moderate breakfast of rolls and coffee is digested in $4\frac{1}{2}$ hours, a good dinner in seven hours, and that during sleep seven to eight hours are required for the disposal of an ordinary supper by the healthy stomach.

If the patient be unable to eat a large test meal, a smaller one consisting of bread and tea is ordered and he is examined two or three hours later by lavage, in order to test the motor capacity of the stomach. If we have a case of nervous dyspepsia to deal with, *i. e.*, a dyspepsia without organic changes in the mucous lining, neither mucus nor food will be found, or they will appear in very small quantity.

This is a very simple method of diagnosis and seems in contrast with the elaborate chemical tests practiced by our friends the gastrologists, almost insignificant. Far be it from me to underrate the value of the test meals of Ewald and others, one of which consists of a roll and a glass of water, which are siphoned or rather drawn out an hour or two later, filtered and examined for hydrochloric acid, ferments, and other elements involved in the digestive acts. These tests, let me urge, are troublesome and by no means accurate or well established. Each prominent gastrologist has a method which he regards as superior to the fallacious method of his confrère. For instance, there is not, according to Ewald, at the present time a single unobjectionable or exact procedure for the estimation of the exact quantity of hydrochloric acid contained in the stomach.

Again, for a long time the mere absence of hydrochloric acid from the contents of the stomach an hour after a test breakfast of rolls and water was regarded as pathognomonic of cancer. Now this is proven fallacious, it having been shown that only in open ulcerative cancer of the stom-

ach is this the case because the secretions from such surfaces neutralize the acid. I may say in parenthesis that at the present time gastrologists assure us that the presence of a considerable quantity of lactic acid after a test meal is regarded as a positive sign of gastric cancer. These tests may serve a useful purpose, nevertheless in very doubtful cases in which clinical signs are insufficient or difficult of interpretation. They may be resorted to in cities where chemists and specialists and pseudo specialists abound. But I desire to impress upon you the fact that for all practical purposes in the majority of cases, the general practitioner is usually competent to make a diagnosis without these tests with sufficient accuracy to cure the patient if he exercise care and judgment. It must be conceded that if we find upon examining the contents of the stomach five or six hours after a hearty meal, that every particle of the latter has been disposed of, we have good reason to believe that the patient's acids and digestive ferments, as well as the motor or propulsive capacity of his stomach are normal. This is the outcome of personal observation during a period of thirty years, before and since the modern tests and methods, all of which I have faithfully practiced, came into vogue. I well remember two cases of cancer of the stomach in which the clinical signs were plain, in one of which a morning irrigation of the stomach brought out putrid detritus of a meal taken twelve hours previously. In both cases a noted specialist in stomach diseases, whose good work in this branch induced me to consult him, declined to say positively from his analysis that the patient suffered from malignant disease. Both patients died, one after an operation. On the other hand, I have recently been consulted by a gentleman who gave a history of having been treated for several years by gastrologists. Boas had pronounced his case nervous dyspepsia, a New York specialist called it gastric catarrh, and made him "swallow electrodes, and undergo all kind of torture," as he expressed it, without result. Another specialist gave him a test meal and pronounced his case nervous, with good digestive powers. When he applied for water treatment, which had benefited him a year ago more than stomach treatment, I found him greatly discouraged by the disagreement of the specialists and their failure to relieve his dyspepsia to which he insisted upon being a martyr. A fall dinner was ordered for him, with the injunction to eat such articles as he had avoided as indigestible, including chocolate *eclaires*

whose mention even horrified him, and to report five hours later. When he witnessed the irrigation of his stomach and saw no return of undigested food, the water returning perfectly clear, he exclaimed: "Now I am convinced that my digestion is normal and I shall no longer worry myself about dyspepsia. Such positive demonstration is more valuable than chemical tests, especially for its moral effect in those cases of nervous dyspepsia which are the bane of the doctor's life.

TREATMENT.

A differential diagnosis having been clearly established between gastric catarrh, nervous dyspepsia and gastric ulcer, the three most prolific sources of difficult digestion, each disease demands a specific, distinct mode of management.

Gastric catarrh is, according to my personal observation, the most frequent cause of dyspepsia in rural districts, and in the smaller towns; nervous dyspepsia having an equal share of prevalence with it in the larger mercantile and manufacturing centres. In discussing catarrh of the stomach it is important to disabuse ourselves of the idea which is but too freely adopted that it is like other catarrhs, as for instance catarrh of the pharynx. The latter is chiefly a hypersecretion arising from inflammation of the epithelial stratum of the mucous membrane. Inasmuch as the lining membrane of the stomach differs materially from that of the pharynx in structure and function, its inflammation assume quite a different aspect. The cylindrical epithelium of the gastric mucous membrane is continuous into the gastric glands, with which it is almost imperceptibly incorporated. Hence the same epithelium practically covers every part of the gastric lining, including all its structures and gastric catarrh, therefore, always involves the latter, if it is not limited to the little elevations between the edges of the glands, which is rarely the case. A gastric catarrh is therefore more like a chronic nephritis in its essential characteristics than like a simple catarrhal inflammation. Bearing these crude pathological facts in mind the salient indications for treatment should be limited to the restoration of the *functions* of the stomach to a normal standard, especially of that portion which produces the excessive secretions, whose interference with the act of digestion is the chief source of trouble. The stomach, be it remembered, is no longer considered an organ of absorp-

tion, but rather is it now regarded as a receptacle for food coming into it after preparation by mastication and insalivation, which it elaborates chemically and mechanically for propulsion into the upper intestinal tract, where the act of absorption and the first step of utilization of the food is accomplished. Not even water is absorbed by the mucous membrane of the stomach. Indeed it is held by physiologists of repute that if well masticated food could reach the duodenum without passing through the stomach it would be utilized almost wholly but that such food may irritate and eventually cripple this most important portion of the digestive and assimilative organs.

The first thing to be done in treating gastric catarrh is to remove the causes which have conspired to produce it. The second indication is to assist the muscular or motor apparatus of the stomach in its work of churning, mingling and propelling of ingesta into the absorbing chambers by introducing only such food as may not embarrass by distending it. The third object is the removal of the accumulated tenacious mucus which embarrasses the stomach glands at every point.

These being the prime indications for treatment, how are they to be fulfilled?

Among the causes of gastric catarrh the most prominent are improper food, insufficient mastication and depreciation of the general health. The removal of these causes would in a large proportion of cases remove the disease entirely, but the enormous difficulty which confronts us in the attempt, soon becomes apparent and discouraging.

1. *Imperfect food.*—The subject of food and its preparation is too extensive for discussion in the limited time at my disposal. Reference to a few salient points must suffice. Saccharine and fatty food should of course be avoided, freshly baked breads or cakes being especially damaging. Among farinaceous foods most of which are objectionable, rice cooked in the true South Carolina fashion, viz: by steaming so that each grain be separate and dry and not pultaceous, is the least harmful. Being exceedingly nutritious as is evidenced by the enormous amount of physical labor endured by the Japanese and others under an almost exclusive rice diet, its constant use at one of the daily meals should be insisted upon. Excess of fluids at meals should be avoided, also all alcoholic and fermented beverages, at all times. Frying is a pernicious mode of cooking, especially when fat is used to increase palatability. Boiled and

broiled meats and fish, eggs, with rice and stale bread, form an ideal diet, and hot (not lukewarm) milk an ideal drink for meals.

So much for the diet for the prevention of gastric catarrh in predisposed persons.

In the treatment of the established disease I limit my patients to a few articles of diet. Meat, especially beef from the round well chopped in an Enterprise chopper and freed from all fibre and fat, called Salisbury steak in our restaurants (after the physician who claims to cure all chronic diseases from dyspepsia to phthisis and tabes by hot water and beef) this preparation of beef is the ideal food in the treatment of true gastric catarrh, because it furnishes but little debris and gives rise to no fermentation, hence no distension and is easily propelled into the duodenum.

The next best food is *hot* milk. It should be so hot that it cannot be consumed except with a spoon and very slowly. My usual dietary prescription in moderately severe cases is a pint or more of very hot milk for breakfast, as much Salisbury steak as the patient desires for luncheon and dinner, with perhaps a little black coffee and some Italian bread (long dry sticks) to lessen the monotony to the palate. In more severe cases I order one pint of very hot water sipped one hour before each meal, *a shorter interval renders its use futile* and interferes with digestion; the meals to consist entirely of chopped meat, without bread. Before broiling this meat Delmonico's chef pours the white of an egg over it, causing cohesion without packing. I have imitated this excellent device with profit. Patients will complain of the monotony of this diet but in these cases it is the only means of feeding at our disposal and should be insisted on gradually if necessary but always peremptorily.

2. Imperfect mastication must be remedied. It is futile to instruct the patient in the avoidance of this prolific source of gastric catarrh, because the fault most frequently arises from thoughtlessness and habit. It is my practice to advise the patient to request those persons who are his habitual table companions to check him whenever he is eating rapidly. Business men should be advised to eat a very light luncheon at their restaurants, because this meal interrupts their work, to which their thoughts constantly revert while eating and thus only by the greatest self control may proper attention be given to thorough mastication. It goes without saying that the teeth, especially in elderly persons, should be put into good condition or re-

placed by artificial ones. The mouth and teeth should be mechanically cleansed and disinfected several times a day by preparations like borine or a moderately strong solution of chlorate potash, because decomposition of ingested food may be started by the commingling of bacteria and partly decomposed food coming from the mouth,

3. Our means of removing mucus from the stomach and restoring the functions of the latter are mechanical and medicinal. Among the former may be counted the anteprecipitation of hot water referred to. I usually prescribe five grains of resorcin an hour before each meal, as an anti-fermentative, and if hot water is not well borne or is impracticable, as in the case of business men, a powder of ten grains each of bismuth and magnesia half an hour before meals serves a good purpose. The most potent means, however, for the removal of mucus and stimulation of the motor function, is stomach washing or lavage. The technique of this little operation is not difficult, but without attention to certain details, failure is sure to attend it. Hence a few words on the subject may not be out of place. In the first place the tube should be made of firm, yet elastic soft rubber, (hard rubber tubes are dangerous), five feet long; from one-quarter to three-eighth inch in diameter, with open end, one inch from which should be located a narrow fenestrum three-quarters of an inch long. The largest size tube affording a more rapid entrance and exit of water shortens the duration of the sometimes unpleasant, though not painful procedure. A medium sized or small tube, with firm, thick walls sometimes passes more readily. The patient should be protected with a rubber apron or other covering, seated upon a chair and a basin placed upon another chair, one of whose corners is wedged between the knees. The procedure should be explained; he should be instructed to breathe through the nose and open mouth, and he may be assured not to apprehend choking when the tube enters the throat, by the fact that the diameter of the tube is much smaller than particles of meat which he has often swallowed. A quart pitcher of tepid water, to which a teaspoonful of salt has been added, a funnel and several towels having been placed in readiness, the mouth is examined and artificial teeth are removed. Bending the head slightly forward, the patient is requested to protrude his tongue, which should never be *pressed* out of the way. The lower end of the tube having been dipped into the water for lubrication (oil damages the rubber), it is grasped

about four inches from its extremity, like a pen; this somewhat rigid portion is now gently passed into the pharynx, avoiding the tongue as much as possible. When it touches the pharynx, the patient is asked to swallow. At this moment the tube is pushed gently downward. In patients having lavage done for the first time, or who are nervous and fretful, rasping and choking will ensue. The tube should be withdrawn if this continues, and a second and third effort should be made, while the patient's morale is sustained by gentle reassurance, and not by scolding. "Put yourself in his place," should be remembered by the physician, when the patient seems alarmed by this simple and harmless procedure. In persons of calm temperament and in those who are accustomed to the tube, it will slip down easily upon gentle yet firm pressure being made and by sliding it through the thumb and forefinger whenever the latter reaches the teeth, until the black ring mark, which is from twelve to eighteen inches from the lower end, reaches the lips. The patient, if quiet, otherwise an assistant, now holds the tube between thumb and forefinger of the left hand close to the teeth, which must not be closed. Adjusting the funnel to the upper end of the tube, five to six ounces of the salt water are poured into it, the funnel is raised to insure the outflow by gravity. If undigested food be present, the water may not flow out readily, because the lower openings are clogged. In this event, raising the funnel higher may force the obstructions out, otherwise the tube must be removed and reintroduced after clearing the fenestra. About half a pint of water having entered the stomach, the funnel should be lowered *while water is still contained in it*, in order to produce siphonage into the funnel, which is now turned to allow the water to flow into the basin. This act is repeated until the water flows out clear. Some patients, about 50 per cent. gag and vomit during lavage. These must be cautioned to hold the teeth apart and simply bend over the basin and let the vomitus flow into it, while they or an assistant simply hold the tube near the teeth, otherwise it will be washed out with the rushing stream. Perseverance and calmness on the part of the physician will insure against failure. Among hundreds of cases I have failed but twice, one being a nervous woman and the other a nervous physician, neither one of whom would permit a second introduction. Singular as it may seem, most patients become accustomed to the tube after two or three introductions. I remember well an old lady from Charleston who

consulted me about eight years ago for a most obstinate gastric catarrh which caused vomiting after meals and impaired her nutrition badly. When she saw the tube she declined to have that "snake like thing" near her. In two weeks she introduced it herself and thus did more to complete the cure than I could have done.

Indeed there is no method of treating this disease comparable to lavage. It should be done before the chief meal once a day, in order to obtain the full benefit of this meal. If mucus accumulates rapidly and this quantity does not diminish each day, after several irrigations, lavage may be done before breakfast also. Mucus is removed, the glands are freed from obstruction, the muscular power is increased by the daily filling and emptying of the stomach and removal of fermenting material, and the introduction of the foreign body increases secretion from the gastric glands.

Another valuable effect of lavage is the discovery of those articles of diet which are best adapted to each case, and in some cases also of certain defects as in the following instance. A lady from Georgetown, S. C., consulted me several years ago for severe colics, for which she had been treated in vain by her intelligent physician at home. Close examination led me to charge her with too rapid eating and careless mastication, she indignantly repudiated the charge, saying that she was the slowest eater in her family. A test meal of rice, beef, tomatoes and accessories, showed particles of unmastericated meat and even some of the rice grains were unscathed and had swollen to twice their size. This ocular proof convinced the patient of the necessity of more thorough mastication and she recovered entirely from gastric catarrh which was the cause of her colic, under the treatment here outlined

The irrigations should be continued daily or less frequently according to the accumulation of mucus, until the stomach remains clear for a week or two and the symptoms subside. Contra indications to the use of the stomach tube are aneurism of the aorta, innominate or carotid arteries, angina pectoris, and uncompensated valvular lesions, fatty heart, pregnancy, cerebral congestion, asthma and very great debility. In ulcer of the stomach, with or without hemorrhage, lavage should be used only with the greatest caution, if at all.

I have perhaps entered into tedious detail upon this subject, but my desire to offer you personal experience obtained from failures and successes, must be my warrant therefor.

Among medicinal agents benefit may be derived from 20 to 30 drop doses of dilute hydrochloric acid in four ounces of water, taken immediately before eating each solid meal. The words "*immediately before eating*" should be emphasized and it must be insisted on that the plate be served and the patient ready for the fork and spoon when the acid is taken. This I learned thirty years ago from Dr. Thomas King Chambers, London's great clinician, and his advice has served me well. There is no other medicinal agent that is of any value in this condition, except resorcin and bismuth already mentioned. I have gone through them all and discarded them. Pepsin I have not used at all in the last ten years, although I formerly used it freely and found it worthless unless combined with muriatic acid. How do we know that it acts in the stomach as it is claimed to act in the test tube? If taken before meals it is probably absorbed or expelled before the stage of digestion for which it is intended is reached. Nor can we expect to compensate for a deficiency of the natural hydrochloric acid by pouring the small quantity above mentioned into the stomach. It is more to its agency as a coagulant of mucus and as a disinfectant agent that its good effect may be ascribed.

It is here in order to say a word about the various commercial combinations of pepsin, lactopeptine, wine of pepsin mixed with medicinal agents, &c. It would seem that the slightest reflection would condemn the use of any and all of these. The apparent beneficial effect sometimes reported is due to the otherwise judicious management of the diet, exercise, etc., in the case. Lactopeptine for instance claims to be composed of several elements, some of which we know would be destroyed by acid, others rendered inert in an alkaline medium. And yet many send this highly lauded conglomeration on its mission through the saliva and gastric juice, without reflecting upon the physiological incongruity involved. The more simply a case of gastric catarrh, and for that matter any disease is treated the more successful will be its management.

The fourth therapeutic indication in gastric catarrh which refers to the *improvement of the general health*, will be referred to at length when considering the next subject.

Treatment of Nervous Dyspepsia.—The indications in this phase of difficult digestion are entirely different from that of gastric catarrh. Instead of the embarrassment of the glandular action present in the latter, we have a hyperse-

cretion usually, hydrochloric acid having even been found in the empty stomachs of some of these patients. A detailed description of nervous dyspepsia is not required before this audience. You are all familiar with it, although it is not as common here as it is in New York and other large cities.

A diagnosis having been clearly made by the stomach tube and lavage, the local distress demands immediate attention. For this purpose bismuth and magnesia in ten grain doses are extremely helpful if given half an hour before meals. The post prandial pains, heartburn and other manifold distresses, often yield to the tablets of animal charcoal, magnesia and ginger, as made by Wyeth and others, one chewed during every half hour. Sometimes larger doses of bicarb sod. or magnesia may be required. Lavage is rarely needed, chiefly when there is an accumulation of gases. We have to deal with a hypersensitiveness of the digestive organism, which may be in comparatively dormant state for a time and at other times be exasperated by some special indiscretion in diet or general conduct. We find no organic defect, but on the contrary, an over active function. The aim of treatment should be to reach the cause which is usually psychical. Close confinement to indoor work, especially in the counting-room and library, must be abandoned, the patient should be placed in close communion with nature, very active exercise is to be deprecated, but change of air and scene are of inestimable value, indeed of greater value than all other treatment. When the patient cannot leave home, or is not benefited by treatment, a course of hydrotherapy offers the best chance to him, provided he limits his work or abandons it entirely. The following cases illustrate the best treatment in such cases.

Mrs. O., age 28, resident of Florida, consulted me, May 5th, 1892, for "catarrh of the stomach," because of agonizing pains after meals. She has been living on mush and milk, and has had medical treatment for several years, with diminution but not disappearance of the pains. She is emaciated; her voice is feeble; she is depressed and hopeless. Her wan face and prematurely old appearance bear evidence of a life of constant physical suffering. There is not a particle of the hysteric element in this case. Ordered at 12:30 p. m. a full test meal at Delmonico's, which she reluctantly accepted because of dreaded increase of pain. The stomach was washed out without difficulty, Mrs. O.

displaying marked patience. To her great surprise, my prediction that her dinner would be digested was verified. a little tomato peel being the only remnant visible.

The diagnosis of a gastric neurosis being thus confirmed, she was ordered a mixed diet, chiefly consisting of hot milk and stale bread and hominy for breakfast, adding eggs (soft boiled later) same with fish or oysters for luncheon, and steamed rice and roast beef for dinner. Desserts and salads forbidden.

The general invigoration of the entire system being the chief element in this case, she was placed upon daily hydiatic measures, adapted to her case by gradually accustoming her to lower temperature and stronger pressures under which she steadily improved.

June 20th : Pain returning, the constant current, 12 milampires, was applied by a large flat sponge electrode over epigastric and a small one over lumbar region.

June 27th : Temperature of baths, having been higher, was now reduced, patient being again depressed ; the jet douche was given at 50° for three seconds. Reaction good.

July 9th : Electricity having been unavailing and fermenting material being found in the stomach, the Scotch douche was applied to epigastric region for thirty seconds after the rain bath, 70° to 45° daily, and followed by jet douche at 50° for three seconds. Patient now feels sufficiently restored to go to Buffalo to her parents.

Under date of November 26th, 1892, she writes that she has gained fifteen pounds in weight and is much stronger : has continued the diet prescribed, because like most of these neurotics, she "feared her stomach was not equal to much of a change." Most of the time she is entirely free from pain ; she has slight distress every now and then, but expresses the warmest gratitude for the help given.

Dr. H. asked me on March 4, 1890 to give him lavage. He looked haggard, suffered from migraine, had worked hard in country practice on Long Island for years, vomited often, with headache, had tried everything, including rest for eight months, dieted very carefully and had recently, under one of our most eminent consultants, who regarded him as suffering from gastric catarrh, confined himself to hot water and chopped beef without avail. He had section of the external rectus done on both eyes by an enthusiast on the subject. Thought he was astigmatic, which Dr. Carl Koller did not concur in. My diagnosis of nervous dyspepsia was confirmed by lavage, which showed perfect digestion of a full and varied meal taken five hours previ-

ously. A mixed diet was ordered which, together with judicious water treatment, relieved him greatly. I have recently seen a patient in consultation, at his home, and found the doctor much improved in flesh; his general health is good, and is maintained by continuing the daily hydrotherapy which I had prescribed for him and by visiting his patients on a bicycle in the summer. He thinks he "would have died if he had continued his former professor's advice to live on meat and hot water." One of the chief difficulties in these cases of nervous dyspepsia is the dread of infringement upon what they have been led to regard as good dietetic rules. The usual effect of a test lavage is marvelous in these cases, inasmuch as it enables us to build up the nutrition and thus improve the general health upon which the local disease seems to depend in most cases, as illustrated in the case already cited. Owing to the lack of time, too much of which I have already occupied, I will not here detail the methods of hydrotherapy indicated, save to say that ablutions with water at 75, reduced one degree every day, the patient standing in a little warm water, is a good domestic measure; and may be followed by daily cold affusions with advantage, and afterwards by institution treatment, where the temperature, pressure and duration may be applied with precision.

In obstinate cases of dyspepsia referred to me by colleagues, after the trial of all known remedies, as illustrated by the case of Dr. H., a judicious water treatment rarely fails, especially if the patient is away from home.

3. The most rare cause of dyspepsia is gastric ulcer. As in other gastric affections, a clear diagnosis, based on the presence of great pain, hemorrhage and difficult digestion should precede treatment. In these cases the stomach tube is inapplicable even when symptoms of fermentation seem to demand it. Kussmaul has devised a valuable method of treatment, which is but the outcome of common sense, because the great desideratum of all traumatic conditions—rest—is best secured by it. In very severe cases, in which vomiting and great gastric tenderness are present, the stomach should be kept undisturbed, even by water. Pain may be subdued by lime water or bismuth in large doses. (Fleiner and others give with benefit as much as 75 to 100 grains as a dose, suspended in water. I use 30—40 grain doses with or without magnesia. Rectal enemata of Liebig's, beef solution, liquid or solid, Peptonoids (Armington Co.) or two eggs with fifteen grains salt in two ounces of warm water, always given after rectum

has been washed out, will sustain the patient during the first days. But the cardinal remedy for gastric ulcer is milk and lime water, equal parts, given warm every two hours, beginning with two ounces and increasing gradually until a pint or more is taken at each meal, slowly sipped with a spoon. I have seen six quarts consumed in one day. The nurse should always guard the patient against intruders, members of the family should be kept away, perfect, absolute rest is essential. The patient should not move out of bed for any purpose, and all entreaties for other food must be resisted. This is the simple, efficient treatment for the first two or three weeks. Gradually farinaceous gruels, then broths may be given, always followed by several ounces of lime water. Carlsbad salts may be used advantageously as a purgative every other day.

The general condition should be carefully looked after. Most of these patients are anæmic. Judicious ablutions, with gradually reduced cold water, gentle friction of the extremities, exposure of the patient's face, the body being well protected, in a well ventilated apartment all day will do more to remove the faulty hæmatosis than iron, which cannot usually be tolerated. The quantity of milk which these patients may take with lime water, despite their protests in the beginning of the treatment, is marvellous, if it be administered systematically. The little woman from San Francisco referred to in the early part of this paper, reached six quarts daily, despite her claim that "it always made her bilious." Sipping it slowly with a spoon, she occupied from five to fifteen minutes on each pint. A good nurse is essential. The disease is serious, and the treatment demands careful attention.

CONCLUSION.

In the presentation of these views it has been my aim to be strictly practical and to offer the most available method of treatment only. I trust that the following is demonstrated.

1st. Dyspepsia, though not a disease *per se*, demands the utmost interest of the physician.

2d. A clear diagnosis of the source of the various manifestations of difficult digestion offers the only guide to successful treatment.

3d. Few cases of dyspepsia will be encountered which resist a judicious management based upon correct diagnosis and simple treatment of the local and general conditions.

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